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ABSTRACT

A study was performed to determine the feasibility of using grade point averages and course-completion ratios in determining the success of community college students who transferred to four-year institutions. Four Texas universities searched their transcript files for students who had transferred from Brazosport College (BC), and provided BC with machine-readable copies of the transcripts. The BC transcripts and those from two of the universities, the University of Texas-Austin (UTA) and Sam Houston State University (SHSU), were matched and merged. Study findings included the following: (1) grade point averages (GPA's) dropped from 3.304 at BC to 2.256 at UTA, an average decrease of 1.048 points; (2) GPA's for students transferring to SHSU dropped 0.191 points, from 2.689 to 2.498; (3) course completion rates fell significantly upon transfer to the four-year institutions, with UTA students showing a particularly large decrease; (4) 67% of those who received a "C" or better in a BC English course received a "C" or better at one of the four-year institutions in subsequent English courses; and (5) overall, BC students did not do as well after transferring as they had at BC. A history of similar research efforts, a 12-item bibliography, and an appendix describing the next study undertaken at BC to test the usefulness of the software system used to analyze transfer data are included. (MAB)

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INTERFACING TWO-YEAR AND FOUR-YEAR TRANSCRIPTS FOR TRANSFER STUDENTS

by

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Abstract

Most community colleges would like a way to answer questions concerning their transfer students such as: How well do the students who transfer from a two-year institution do at a four-year institution? Several apparent reasons can be given for desiring data that would help answer these types of questions.

After several years of planning and testing, and through the efforts of a few Texas community colleges, questions such as the one asked above can now be answered. Using a proprietary format designed to transmit transcripts electronically, the data on transfer students are sent to the community college by cooperating four-year institutions. The computer software developed by these cooperating community colleges merges the transcript data from both institutions into SPSS system files for analysis. Some standard reports are included in the software along with the capability to do course-by-course analysis. Since SPSS system files are generated, the data are combined with LONESTAR (longitudinal tracking) data for analysis. This system is explained in this paper.

Interfacing Two-Year and Four-Year Transcripts

for Transfer Students

Comprehensive community colleges in Texas are obligated to enroll any student who "walks through the door." Whether or not a student is prepared to go to college, or demonstrates any other reasonable indicator of college readiness, usually does not enter into the decision. However, most other higher education institutions can apply any standards it deems -- even de facto standards -- in order to filter incoming students. Community colleges accept the high school TRANSFER student, often when entering educational expectations and attainments are totally misaligned. After students have attended a community college, many of their educational outcomes are attributed to the community college. Outcomes such as program completion, volatile persistence behavior, lost opportunity, or performance behavior become indicators of the community college's efforts. After transferring to a four-year institution, these same outcomes again become indicators of the community college experience. Truly, four-year institutions are Teflon coated when it comes to attributing causes for a transfer student's not succeeding.

Ludwig and Palmer (1993) illustrate the mind-set described above. On September 21-22, 1992, the National Center for Academic Achievement and Transfer held a Research Seminar to examine the current research in community college transfer and what factors should guide future research in this arena. Eleven premises resulted: "The seminar participants identified the following premises upon which hypotheses concerning the relationship between mission and transfer might be structured (p 2)." These premises, at the least, are an indictment of the community college transfer function.

The two nexuses of transfer choice (high school to community college to four-year institution) are artifacts of educational structure, not educational processes (e.g. learning, acquiring skills). The educational experience should be seamless; that is, education should be a process in which a person participates from the womb to the tomb, without structural hindrances (credit hours, grades, graduation, level completion, etc.).

Educational progress and the acquisition of criterion-referenced competencies should be the measuring rods for advancing from one "level" to the next.

The most outspoken critics of community colleges such as Cohen and Clark are rooted in the university philosophy. This writer is neither suggesting that university folk should not criticize two-year institutions, nor that they may not understand what the community college is all about; however, this writer is suggesting that their criticism illustrates the need for community colleges to do a better job of being accountable for their transfer efforts.

Community colleges do suffer from transfer-outcomes misalignment, a distorted view one gets from looking at the transfer function through a "traditional paradigm" lens. Many issues surround the transfer topic, some of which are exacerbated by the imposition of unreasonable expectations of those external to the community college environment, as illustrated by the "cooling out" theory of Clark or the theory of career diversion of Cohen and others. Community colleges work with diverse populations, some of which do not wish to transfer nor enroll in a transfer program. For instance, Brazosport College enrolls many students who already have obtained a four-year degree. These students usually enroll for specific training needs -- a course in Lotus 1-2-3, for example -- and are not interested in a transfer program. Some students attend Brazosport College because the company who employs them will pay for tuition and fees. Other types of students can be identified who also have no interest in transfer. Should, then, these types of students be counted in transfer rates? This leads to the most basic question of transfer which was stated well by Robert Penderson (1993): "Rather, the interest in issues of workforce retraining among community college leaders should be seen as raising real questions about the relevancy of the transfer function at the close of the twentieth century. Those community college critics who have argued that the weakening commitment of these leaders to the transfer role reflects their desire to complete the vocationalization of the two-year college as part of a larger class-biased society conspiracy have come to this

conclusion without first answering the most basic of questions: Is there, in fact, a convincing rationale for a continuation of the transfer function?" (p 4)

Community colleges have been on the higher education scene for nearly one hundred years. Does anyone still question their reasons for existence? Whom they serve? What programs they offer? The diverse populations they serve? Transfer is but one mission among many. When examining the community college transfer function, one should be as careful in defining the transfer population as one would be in doing any other type of research.

Before describing the project from which the data was gathered for the primary focus of this report descriptions of transfer-related projects in which Texas community colleges have participated are provided. Appropriate results from and a context for this project are also included.

Ford Foundation-Sponsored Transfer Assembly Project (TAP)

Brazosport College has participated in this study, directed by Dr. Arthur Cohen, for the past two years. His study is well-known, and several other community colleges in Texas have also participated. This study examined transfer trends only; very little related data are available. Course-taking behavior, student intent when matriculating at a community college, major, and many other student characteristics are not included in the study. The Texas Higher Education Coordinating Board (THECB) is the agency with which Dr. Cohen collaborates to centralize data gathering and transfer identification. Only students who have completed twelve semester credit hours in approved THECB transfer courses are included in the study. Results of Dr. Cohen's efforts are shown in Table 1.

One salient problem with this study is the lack of transfer data attributable to private Texas four-year institutions and out-of-state four-year institutions. Texas has a number of private colleges and universities (Baylor, Southern Methodist University, Houston Baptist University, and others), and to ignore the transfer of community colleges

Table 1: Transfer Results for Brazosport College - Cohen Project

Group	1986 Cohort	1987 Cohort
Transfers	113	80
Pct	24.9	20.5
Non-Transfers	341	271
Pct	75.1	79.5
Total	454	341

to these institutions definitely skews the data. Persistence patterns and performance indicators are not examined in the Cohen Project. In order to determine the effectiveness of the community college experience, examination of some of these indicators is essential before one begins to fully understand the "transfer function." As will be described later, a group of Texas community colleges are piloting a much better data-collection process, which will include private institutions in Texas.

With regard to the methodology and the results obtained from a study like Cohen's, much posturing has been taking place as to the value of these data collection and reporting efforts. This project should be judged on its effectiveness -- does it accomplish its goals? Even though the author of this project admits to its limitations, he continually defends the worthiness of the effort. However worthy this effort, the problem is still the lack of a quality transfer evaluation model.

TEX-SIS

Another effort in the follow-up milieu of community college transfer is The Texas Student Information System (TEX-SIS), a company directed by Dr. Jim Reed. This organization helps gather follow-up data from community college leavers, completers, and employers of these students by distributing a survey to those in the above groups. These surveys are disseminated and collected by the contracting community college. Once the surveys are completed, they are sent to Dr. Reed where the survey responses are entered into computer files. Reports are then generated and distributed to the contracting community colleges. Even though this system has worked fairly well, there are two major

problems with this system: (1) some community colleges have very low survey-return rates (even where a return-the-survey effort is intensive), and (2) the process takes several months to complete making the results dated. Even with these problems, the value of this effort to the development and implementation of the current follow-up system has been substantive, as Dr. Reed has been included in its planning and implementation.

LONESTAR

The well-known Longitudinal Evaluation, Student Tracking, and Reporting System that was developed in Texas during the late 1980's is currently being used by over thirty community colleges in Texas and at least two colleges outside Texas. A part of this tracking system consists of data fields for the purpose of storing follow-up data. This part of LONESTAR was envisioned before any usable models were available and before the Student Right to Know and Perkin's Performance Measures were front-page news. As a result, the data needs were underestimated and reporting functions unknown. Since then, many of these "unknowns" have been decided upon and have been implemented into the LONESTAR system.

As with the other systems described in this report, LONESTAR has helped provide the needed impetus to develop an automated student follow-up system.

History of the Texas Automated Student Follow-up Project

The Texas Automated Student Follow-up Project (TASFUP), a system designed to collect transfer data as well as employment data, had its genesis in a 1988-89 study conducted by Dr. Michael Green, North Harris Montgomery County College District in cooperation with The Anderson Company and Texas State Occupational Information Coordinating Committee (SOICC). This pilot project investigated the possibilities of matching Social Security numbers of students who attended one of the study's pilot institutions, with the unemployment insurance (UI) records kept in the Texas Employment Commission's (TEC) databases. Dr. Green not only demonstrated that the matching could be done, but also the data obtained can give an institution some valuable follow-up

information. Jarosik and Phelps (1992) described many of these UI matching efforts in the monograph Empowering Accountability for Vocational-Technical Education: The Analysis and Use of Wage Records.

In 1990, Dr. David Preston, Brazosport College, led a group of community colleges in a project to replicate Dr. Green's study, improving upon the process of collecting the data and developing a follow-up model that could be implemented state-wide. A by-product of this project was the writing and distribution of some SPSS programs, written by Georgia Clark of El Paso Community College, to analyze the data returned by the Texas Employment Commission (TEC). One ingredient added to the 1990 project was the inclusion of the Texas Higher Education Coordinating Board (THECB) to act as the clearinghouse for the data collected from the community colleges and passed onto the TEC for matching and to provide legal assistance where needed. The project was highly successful and convinced principals at the THECB as to the practical value of collecting this type of data. One reason for this heightened interest by the THECB was the state-wide "push" for accountability by the Texas Legislature in the area of occupational-training effectiveness. In fact, the interest became so strong that the THECB designated Carl Perkin's discretionary funds to expand this project into a more encompassing data-collection and reporting effort. As a result TASFUP was born.

Florida has been involved in a project of this type for several years. Much of the TASFUP has been based on this model -- the Florida Education and Training Placement Information Program (FETPIP).

Texas Automated Student Follow-up Project

This third effort, begun in 1991, was led by Dr. George Baker, University of Texas-Austin. The added component to this phase was the process of doing a second match with the THECB student history files to determine if the student had transferred to a four-year institution and, if so, include the FICE of the four-year institution in the student record returned to the community colleges. Fifteen Texas community colleges

participated in this study. Several regional meetings were held at strategic locations to sensitize and inform Texas community colleges as to the process and the project's value to them. This phase of the project was completed in June of 1992, and a full report on the project was presented during a state-wide meeting on this phase of TASFUP in Austin.

Brazosport College was also a pilot institution for this project. The THECB also used state reporting files to generate the list of student SSN's to send to the TEC for matching. After the student SSN's were matched against the TEC files, the matched records were sent to the THECB who disaggregated the file and sent corresponding records to the pilot institutions. Table 2, obtained from analysis of the matched files by the THECB, shows some of the results of this phase.

These results show that 42% of the traditional Brazosport College academic students transfer to another higher education institution. Not all transfers are to a four-year institution, but the number of Brazosport College students who transfer to another two-year institution is very small. The surprising result to this researcher was that 23.2% of the vocational student population transferred, and that 31% of the undeclared-major population transferred.

Table 2: 1992 Wage Record Summary Report

Type of Major		Number of Leavers and Grads	Number Pursuing Add'l Education	Number Employed	Additional Education and Employed	Additional Education and/or Employed
Academic	Grad	68	41	59	34	66
	Pct		60.29	86.76	50.00	97.06
	Non-Ret	857	349	693	266	776
	Pct		40.72	80.86	31.04	90.55
	Total	925	390	752	300	842
	Pct		42.16	81.30	32.43	91.03
Tech	Grad	112	26	100	21	105
	Pct		23.21	89.29	18.75	93.75
	Non-Ret	2063	108	1849	81	1876
	Pct		5.24	89.63	3.93	90.94
	Total	2175	134	1949	102	1981
	Pct		6.16	89.61	4.69	91.08
Undecl	Non-Ret	841	261	679	197	743
	Pct		31.03	80.74	23.42	88.35
	Total	841	261	679	197	743
	Pct		31.03	80.74	23.42	88.35
Inst Total		3941	785	3380	999	3566
Pct			19.92	85.77	15.20	90.48

The graduates in this study include all technical and academic students who were reported on the Graduation Report during the 1990-91 academic year. The non-returning students include students who were enrolled during any one of the semesters from Summer, 1990, to Spring, 1991, inclusive. Employment was determined by matching for student Social Security numbers against the Texas Employment Commission's Unemployment Insurance-Wage Record database. The Pursuing Additional Education column was derived by matching former students against the Fall, 1991, student enrollment reports for all public institutions of higher education. SOURCE: Texas Higher Education Coordinating Board.

For those who received a degree, the transfer rate was 60.3%. These results point out that those who are goal-oriented have a higher transfer rate. This would suggest that intent was an important motivating factor in the student's transfer behavior. In fact, focusing on the overall transfer rate gives a myopic view of community college transfer patterns.

The next phase of the follow-up project is currently underway, directed by Texas SOICC. In this phase, SOICC sub-contracted with TEX-SIS (Texas Student Information

System) , headed by Dr. Jim Reed, who conducted an employer survey as a part of this phase of the project. Since the data returned by the THECB to the community colleges included the name of the employers with whom a student was employed (when a Social Security match occurred), Dr. Reed sent a survey to these employers, asking them for a job title and whether or not the student was employed full-time for the full quarter. He included only community college completers in this pilot survey. The data collection has been completed and the data analysis is nearing completion at the time of writing this report and will be disseminated during a state-wide meeting in Austin on June 24, 1993.

During this phase, two other important components were added: (1) one high school district was asked to participate in a pilot to match their students with the TEC database, and (2) three private four-year institutions were asked to pilot an attempt at sending to the THECB data concerning their students who had transferred from a Texas community college for inclusion into the project's data files. These two pilots also have shown a lot of promise in adding to the completeness of the TASFUP database.

The future of the project is bright. Since 1986, Dr. John Grable, President of Brazosport College, has been the unwavering leader in accomplishing this seemingly overwhelming task of putting together a complete student-tracking system for the state of Texas. His foresight and consistent support of the follow-up project have been the underpinnings of its success, and he continues to work toward the goal of completing the TASFUP project. During the 1993-94 fiscal year, the project will be financed by a Tri-Agency contract, so that the system can be improved upon.

Texas Higher Education Project for the Examination of Transcripts

In concert with the development of TASFUP, one other project has helped complete the transfer data-collection puzzle. This project, referred to as the Texas Higher Education Project for the Examination of Transcripts (THEPET), began several years ago and was completed in 1992. At the time of its conception, the Alliance for Higher Education (AHE) -- a consortium of four-year institutions in north Texas -- had developed

and put into operation the Electronic Transcript Network (ETN). This system included a file format which has been copyrighted by AHE and was used to transmit transcript files over the network. Community colleges started to join the ETN system in the late 1980's, with Brazosport College joining the ETN system in 1986. Before the ETN was used by community colleges, any transcripts sent to them were paper copies, and the type of transcript analysis desired was just not physically possible. Dr. Don Pugh, Brazosport College, put together the idea of THEPET and led the endeavor to make the project a reality. Much of the project is described later in this report. In simplified form, THEPET consists of a set of programs to disaggregate the two and four-year transcript files in the ETN format into course files (flat files - no proprietary format) so that the files can be merged into a single transcript file and then used as input for the SPSS programs written specifically to produce standardized reports. The THEPET system was used to analyze and report the results contained in this report. The completion of this project was an important turning-point in completing the transfer data-collection puzzle.

All these projects were instituted and undertaken to help researchers, faculty, program directors, state legislators, and others understand the transfer function by actually having "real" data available for analysis. Therefore, questions regarding performance of community college transfer students could be addressed, rather than depending upon anecdotal data.

Problem Statement

"Accountability" and "Institutional Effectiveness" have become the buzzwords of the 1980' s and 1990's. These concepts litter the highways of education. Does an institution do what they say they are doing? Can the institution produce the necessary data to support their contentions that they do what they say they are doing? Since the transfer function of community colleges is usually found in most community colleges' mission statements, transfer outcomes must be found and documented. In addition, indicators of these outcomes must be measured and analyzed.

The transfer function, in its simplest operational definition, is the process of educationally preparing a community college student leaver to later enroll and attend a four-year institution. Problems arise when measures such as transfer rate are used as an indicator of community college outcomes as this may determine the effectiveness of a community college's transfer effort. One problem is the development of a satisfactory definition for "transfer population." Since community colleges enroll such a diverse student population with goals other than transfer, and many of whom do not enter a "transfer program," the definition of a potential-transfer population is very difficult to construct. Other transfer-related issues making a study of this topic difficult include: (1) reverse transfers, (2) identification of the contributions (value added) of the community college education, (3) data collection/file/storage/ retrieval, etc., (4) selection of measures to show successful transfer, (5) comparison-group's identification, (6) measurement of progress, and (7) other factors affecting transfer, such as location, articulation policies, demographics, legislation, and others. Many issues must be considered in the community college transfer function.

This study was entirely exploratory in an attempt to determine if one performance measure, grade point average, and one persistence measure, course-completion ratio, can be used effectively to indicate transfer success. Transfer rates were not an issue in this study.

Purpose of the Study

This report is descriptive and exploratory. The methodology used in the data analysis and the lessons learned from this investigation will be used for further study -- on which there will be community college fingerprints from top to bottom. In part, this report is a response to the challenge set forth by Cohen (1993) in Community College Week: "We want the colleges to come forward with genuine, reliable data based on consistent definitions. We want them to be proactive in publicizing their outcomes. We

feel that by so doing they would strengthen their position as vital players in America's higher education system." (p 4)

The problem, then, is to determine the feasibility of using grade point average and course-completion ratio in determining the success of community college students who have transferred to four-year institutions.

Population

The population consisted of those students who attended two community colleges in southeast Texas near a large metropolitan area and transferred to four four-year institutions in Texas during the time period from September, 1989 to June 1, 1992. The participating four-year institutions were included because of their ability to produce transcripts in electronic format in accordance with the pre-determined file structure established by the Alliance of Higher Education (AHE). This ETN format is a subset of the SPEEDE system, an ANSI standard for electronic transcript transmission. Because of data formatting problems, two of the four-year transcript files could not be used for this report.

Sample

The sample used in this report consisted of those students from the population who attended Brazosport College only. Several other community colleges were asked to participate, but because of data-formatting errors and inconsistencies in four-year institution's compliance with the ETN-format, only two community colleges' data were usable. However, because of the sensitivity of the data, and a reluctance of this researcher to arouse spurious conclusions on the part of the reader, only Brazosport College data were used for this report. The next attempt of this project, described in Appendix A, will occur later in 1993 and will include data from five other community colleges and at least five four-year institutions.

Data Collection and Analysis Process

Transcripts were sent to Brazosport College from the following four-year institutions: (1) University of Texas - Austin, (2) Texas A & M University, (3) Sam Houston State University, and (4) University of Houston - Main Campus. These institutions searched their transcript files for students who had transferred from Brazosport College, generated electronic transcripts for those students who met the criteria, downloaded the transcript data files onto diskette, and mailed the diskette to the Director of Institutional Research and Planning at Brazosport College. The four-year transcripts were processed to generate a list of Social Security numbers (SSN's) from which the two-year transcripts were generated so that each SSN included in the study had a two and four-year transcript associated with it. These two transcript files became the source files for the software used for transcript analysis (THEPET).

The THEPET software (BLD2RECS and BLD4RECS, written in ANSI C) uses the two transcript files described above as input to generate two new files (SPSS2YR, SPSS4YR), in a format that can be read by SPSSPC+. Another THEPET program (SRTMRG), written in SPSSPC+, uses the SPSS2YR and SPSS4YR output files as input and generates one file (SPSSARTS), having matched and merged the two and four-year transcript records. This merged file (SPSSARTS) can then be used for standard THEPET reports (from a menu) or ad hoc reports, depending upon the needs and SPSSPC+ programming skills of the user.

Another function of THEPET allows for the building of two additional files containing two and four-year course records, with which the researcher can do comparison analyses; that is, the performance in departments or courses at the two-year institution can be compared with the performance in related departments or courses at the four-year institution. This function allows the researcher, for example, to determine if a mathematics student from a two-year institution does as well in subsequent mathematics courses taken at the transfer institution as he/she did in two-year mathematics courses.

THEPET Results at Brazosport College

Table 3 compares the differences between Brazosport College students' grade point averages while attending Brazosport College and those grade point averages attained by these students after transferring to a four-year institution. The two four-year institutions included in the comparisons were University of Texas - Austin (UTA), the flagship university for Texas, and Sam Houston State University (SHSU), a small rural university in Huntsville, Texas. The magnitude of the UTA differences was surprising to this researcher.

Table 3 : GPA Comparisons For Brazosport College Students

Institution	Two Year GPA	Four Year GPA	Difference
Overall	2.757	2.471	- 0.286
UTA	3.304	2.256	- 1.048
SHSU	2.689	2.498	- 0.191

Many causes for these differences could be alluded to, an exercise beyond the scope of this report. However, these results do beg some questions that may or may not be important to answer. The obvious analysis was to do T-tests on the averages. Although the values are not shown, the differences were statistically significant. Of course, for those who wish community colleges would disappear, these results provide support to the "lock and load" mentality. Even though these data are NOT conclusive, and were not reported to provide support for any causal behavior, they do show the need for further research. One more caveat is in order; this writer would encourage the reader to examine the writings of Lord, Bereiter, Cronbach and others on the subject of Measuring Change before too much is made of the grade differences.

Persistence was also used as a measure of two-year effectiveness and is reported in Table 4. The persistence measure, for the purpose of this report, was course-completion rate. Course completion rate was defined as the result of dividing the total number of credit hours for those courses completed with a grade of "A", "B", "C", "D", or "F" by the

total number of credit hours attempted with a grade of "A", "B", "C", "D", "F", "W", or "I". Noncredit, remedial, or any other course having a grade not conforming to the "usual" grading rubric was omitted from the total credit hours completed and attempted. Grades with a minus or plus, were considered by removing the plus or minus first and then determining whether or not it met the above requirements. Different types of withdrawals were not considered; "WP", "WF", and "W" were all counted as a "W." As shown in Table 4, a student's persistence rate fell upon transfer to a four-year institution. Again, the urge to test the differences in completion rates was too overwhelming so T-tests were used, and these persistence differences were statistically significant. Even though a decrease was expected, the large decrease at UTA was somewhat surprising, again showing a need for further research.

Table 4: Persistence Comparisons for Brazosport College Students

Institution	Two Year Completion	Four Year Completion	Difference
Overall	0.969	0.921	- 0.048
UTA	0.965	0.809	- 0.156
SHSU	0.995	0.934	- 0.061

Table 5 shows the GPA and course-completion for Brazosport College's students, but examines the number of community college credit hours completed (using the same definition of course completion described above) prior to transfer. Those falling into the "46+ Hour" category more than likely were the students who either obtained an Associates Degree or "came close." These results seemed counter-intuitive; for instance, the two-year persistence increases from .967 to .971, but slightly decreases from .926 to .905 at the four-year institution -- a negative correlation. This researcher did not compare the number of hours completed at the four-year institution with any of the other variables..

Table 5: Comparisons for Brazosport College Students by Hours Completed at BC

Hours Completed	Two Year GPA	Four Year GPA	Two Year Completion	Four Year Completion
1-15 Hours	2.749	2.487	0.967	0.926
16-30 Hours	2.688	2.488	0.968	0.932
31-45 Hours	2.708	2.435	0.961	0.920
46 + Hours	2.868	2.471	0.971	0.905

Table 6 illustrates another capability inherent in the THEPET software. One can perform course-by-course comparisons in a very rudimentary way or a very sophisticated way depending, upon the skills of the researcher. This table shows the relationship between the grades obtained from taking a beginning college English course at Brazosport College and the grades obtained from taking a four-year college English course at one of the two four-year institutions participating in this report. The students included in this sample had taken what is considered a first college English course at Brazosport College and completed the course with a grade other than "W" or "I" (same completion definition as described above).

The results in Table 6 show that 67% of those who received a "C" or better at Brazosport College received a "C" or better at one of the two four-year institutions in subsequent English courses. The four-year institutions included grade points awarded and credit hours attempted, therefore the grade-point ratio for that course could be calculated by dividing the grade points awarded by the credit hours attempted. The researcher then assumed that the ratio indicated a typical four-point grade rubric and used SPSSPC+ to crosstab the data.

Table 6: Grade Point Ratio Comparisons - English

		Four-Year					
	Grade Point Ratio	A	B	C	D	F	Total
Two Year	A	5	12	7	1	1	26
	B	5	24	18	4	18	69
	C	6	17	14	5	5	47
	D	0	1	2	0	1	4
	F	1	5	5	1	3	15
	Total	17	59	46	11	28	161

The results suggested that the beginning two-year college English course does, in fact, adequately prepare the Brazosport College transfer student for four-year college English courses. Other crosstabs can be done in order to compare courses. One problem with these results was that many of the cells were sparsely populated. This is one arena where some articulation makes sense, so that incorrect comparisons will not be made; that is, a consensus among two and four-year faculty in answering the question: What two-year courses seem to prepare the transfer student for what four-year courses?

Conclusions, Implications, and Recommendations

This exploratory study examined one performance variable, grade point average, and one persistence variable, course-completion ratio. The results suggested that Brazosport College students did not do as well after transferring to a four-year institutions in Texas as they had in the two-year college setting. A drop in both grade point average and persistence was expected by this researcher but not to the extent as was evidenced by the University of Texas results.

Many reasons could be given for the decrease in grade point averages and persistence rates, one of which would be course preparation. However, as shown in the English course-by-course comparison, the results suggest that community college preparation, at least in this one area, was adequate. Even though preparation seemed to be adequate, curriculum alignment could certainly remain as the mitigating variable. The

skills needed for success in certain science courses at the four-year institution may not be obtained by the transfer student for any number of reasons. One of these reasons would be that community college students seem to avoid mathematics and science courses as late as possible in their course-taking activities. This behavioral tendency should be investigated in further research.

The results of this study suggest that more course and departmental comparisons should be completed. A better match-up could be done by having faculty help determine which two-year courses would be reasonable forerunners for four-year courses. This matching process would provide a substantial improvement in the analysis of the data.

Another study has been undertaken by Brazosport College and five other southeast Texas community colleges. At least five four-year institutions will be asked to participate in the study. Appendix A describes the project in detail. Hopefully, the results from this research will provide some conclusive evidence regarding the persistence and performance of community college transfer students.

The primary recommendation from this researcher is to develop data consistencies on the transcript files received from four-year institutions. Over half of the data received was discarded because it did not conform to the ETN format specifications in one way or another.

The type of data available for this study certainly has been examined by previous researchers. The format of the data, collaborative efforts of both two and four-year institutions, and the methodology is certainly unique to Texas in transfer research. This researcher would encourage further research in this arena -- especially by community colleges.

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Appendix A

Pilot Project for the Use of THEPET

Start: May, 1993
(EST) End: November, 1993

Participating Institutions:

Brazosport College
San Jacinto College District
Amarillo College
North Harris Montgomery County College District
Blinn College
Lee College

Project Coordinator:

Dr. David L. Preston, Sr.
Brazosport College

Purpose of the Study

The purpose of this study is to test the usablitiy of THEPET, a software system designed to analyze transfer data from transcripts submitted by four-year institutions to two-year institutions. The data will be supplied on electronic media using the proprietary format for electronically transmitting transcripts owned by AHE (The Alliance for Higher Education) and referred to as "the ETN-format" (Electronic Transcript Network).

Population

The population to be used for this study will be those students who attended the participant's institution and who:

1. have completed at least 12 non-remedial/developmental credit hours at the participant's institution,
2. enrolled in higher education for the FIRST time at the participant's institution, and
3. attended the participant's institution at least one fali, spring, and/or summer term within the time period from September, 1989, to December, 1992.

Procedures

The Social Security numbers (numeric, nine-digit, assigned by the Social Security Administration) of the students selected for the study will be used as the "key" for the files generated by the two-year participating institutions. These files containing the lists of Social Security numbers (SSN's) of the selected students will be sent to the respective four-year institutions where the SSN's will be matched against their transcript files. The four-year institution will send a transcript for each matched SSN, in the ETN-format, to the requesting two-year institution. The two-year institution, upon receiving the four-year transcript will generate two-year transcripts in the ETN-format for the same group of students. The four-year transcripts and the two-year transcripts generated for the matched-students will be used by the THEPET software for merging and analyses. The additional data items to be collected by each participating community college and appended to the transcript files after merging are described in Table 2. The merged, four-year/two-year-transcript files will be sent to Brazosport College for analyses using all the participating institution's transcripts so that an aggregated report can be completed and reported. The results of this study will be presented at the Annual Fall LONESTAR User's Group Meeting in November, 1993.

Rationale

The intent of this study is to assess the value added to a student's educational experience because of their attendance at a two-year higher educational institution. The pilot institutions (participants) concluded that those students who transferred from other

institutions to the two-year institution would already have had some "value added" because of their previous educational experiences and will be excluded from this study.

Also discussed were transient students and the impact on the study of their inclusion into the population. In order to adequately analyze the differences these transient students may exhibit, the participants decided to flag these students so that they can be studied as a sub-population.

Remedial (or developmental) students were also discussed concerning their inclusion or exclusion from the population considered for this study. The participants decided to flag these students as having been in remediation, using the coding scheme used on the CBM002 report. The participants wanted to address the ubiquitous question of whether the developmental/remedial student performs and/or behaves in a different manner than the non-developmental/remedial student.

Other sub-populations were discussed, but because of the nature of the study, the participants felt that keeping the number of independent variables to a minimum would be appropriate at this time.

Table 1: PARTICIPATING INSTITUTIONS

Participating Two-Year Institutions/ Contact Person/ Phone Numbers	Participating Four-Year Institutions/ Contact Person
Amarillo College Dr. Stanley Adelman Database Coordinator, Director of Institutional Research Phone: 806-371-5113 Fax: 806-371-5370	West Texas State University
Brazosport College Dr. David L. Preston Director, Institutional Research Planning Phone: 409-266-3256 Fax: 409-265-2944	University of Houston Sam Houston State University University of Texas, Austin Texas A & M University
Blinn College Dr. James Calarco Director of Institutional Research and Effectiveness Phone: 409-830-4119 Fax: 409-830-4116	University of Houston Sam Houston State University University of Texas, Austin Texas A & M University

Lee College Dr. Tom Sanders Dean of Student Development and Planning Phone: 713-424-6400 Fax: 713-425-6555	University of Houston Sam Houston State University University of Texas, Austin Texas A & M University
North Harris Montgomery County College District Dr. Mike Green Assoc. Vice Chancellor for Research and Planning Phone: 713-591-3521 Fax: 713-591-3513	University of Houston Sam Houston State University University of Texas, Austin Texas A & M University
San Jacinto College District Dr. Richard Bailey Director of Research and Evaluation Phone: 713-479-6176 Fax: 713-479-8127	University of Houston Sam Houston State University University of Texas, Austin Texas A & M University

Contacts:

University of Texas - Austin	Mike Allen Associate Registrar Austin, TX 78712 512-471-6254
University of Houston	Susan Zwieg Office of Admissions Houston, TX 713-743-9627
Sam Houston State University	Robert Dunning Registrar Huntsville, TX 77341 409-294-1040
Texas A & M University	Bill Garrett, Programmer Analyst Computing Services Center College Station, TX 77843-3142 409-845-4211
West Texas State University	Linda Elliott Registrar Canyon, TX 79016 806-656-2022

Variable Definitions

There will be two primary dependent variables used in this study: (1) persistence, and (2) performance. For this study, persistence will be defined as the course completion ratio, which is found by dividing the credit hours earned by the credit hours attempted. In general, any course in which the student earns a grade of "A", "B", "C", "D", or "F" will be counted as a course completed as well as a course attempted. Any course in which the student received any grade other than "A", "B", "C", "D", or "F" will be counted as a course attempted. Even though the above definition is the one preferred, the respective transcripts will be coded with hours attempted and hours earned; so, in most cases, these hours will be determined by the awarding institution and used without question in this study. By using the Common Course Numbering System, remedial courses for the two-year institutions can be identified and used to help determine those students who will be included in this study.

The performance of the students will be measured by using the grade point averages earned at the two-year and four-year institutions. The institutions who generate the transcripts will also calculate their respective grade point averages, and these averages will be the ones used in the analyses.

A measure of success is performance in certain two-year courses as compared to course performance in corresponding four-year courses. Such comparison will be made between two-year English courses and four-year English courses, and between two-year mathematics courses and four-year engineering courses. Other comparisons such as these may be made in a post hoc fashion.

Research Questions

The research questions are as follows:

1. There is no difference in the persistence rate of two-year college students who transfer to a four-year college, as measured by course completion ratio, and their four-year college persistence rate.

2. There is no difference in the performance of two-year college students who transfer to a four-year college, as measured by grade point average, and their four-year college performance.

3. There is no difference in the course performance of two-year college students who transfer to a four-year college, as measured by course grade point average, and the four-year college course performance.

The independent variables for this study will be type of major (academic/vo-tech/undecided), student objective at first-enrollment (using the LONESTAR rubric), academic standing, student type (transient or not), remediation status (using CBM002

definitions), and ethnicity. The dependent variables will be the grade point averages while attending the two-year and four-year institutions, and persistence as measured by the course completion ratios at the two-year and four-year institutions. The participants will also do some course-by-course comparisons, using the THEPET software, comparing performance in appropriate English and mathematics grades, along with some other appropriate course-to-course comparisons.

Implications

By completing this study, the participating institutions will have shown that community colleges are concerned with the transfer function and are attempting to track student outcomes. These variables will help determine the value of attending a two-year institution prior to attending a four-year institution. Whatever that value happens to be, the population will have been selected in such a way as to allow the contributions to be attributable to only the two-year-college experience.

After doing this study, and if it suggests that a student's performance and behavior is the same at both types of institutions, it is hoped that more institutions will use the model developed to further study the transfer phenomenon and, in fact, expand the model to more adequately determine the community college's contribution to higher education.

Table 2: DATA DICTIONARY
(Additions to the Transcript Files)

Field	Descriptions	Position	Type
SSN	Social Security Number	1-9	A
ETHNIC	Ethnic Code 1. White, Non-Hispanic 2. Black, Non-Hispanic 3. Hispanic 4. Asian or Pacific Islander 5. American Native 6. Non-Resident Alien	10	N
REMED	Remediation provided during the period (Sept, 1989 through December, 1992) 0. Not tested 1. Yes, course based 2. Yes, non-course-based 3. Yes, combination of 1 and 2 4. Yes, at a correctional institution 5. Delayed 6. Not required 7. TASP completed prior to period	11	N
ACASTD	Academic standing during the period 1. Good academic standing throughout the period 2. Probation in at least one semester during the period 3. Suspension in at least one semester during the period	12	N
TRANS	Transient student flag 0. No 1. Yes	13	N
HRSCOM	Number of credit hours completed at the two-year institution prior to transfer	14-16	N
PROGTRK	Major type 1. Vocational 2. Academic 3. Undecided	17	N

STUDOBJ	Student objective 1. Get a job 2. Improve skills needed in current job 3. Get a better job 4. Maintain licensure 5. Earn a certificate 6. Earn a two-year degree 7. Earn credit to apply to a four-year degree 8. Personal enrichment 9. Other	18	N